

The background of the slide features a dark blue, textured surface with several light blue, semi-transparent images of sea shells and a starfish. The shells are positioned in the upper left, lower left, and lower right, while the starfish is in the upper right. A white, stylized bird-like logo is centered above the main text.

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Regulatory Framework – Ocean Aquaculture in S.C.

M. Richard DeVoe
S.C. Sea Grant Consortium

Basic Requirements of Marine Aquaculture

- High water quality locations
- Access to the aquaculture site
- Assertion of exclusive culturing rights
- Financial investment
- Government commitment to industry development

Issues Confronting Marine Aquaculture

1. Nature of the Aquaculture Industry
2. Socio-cultural Considerations
3. Coastal Use Conflicts
4. Environmental and Ecological Concerns
5. Institutional and Legal Environment

Issues Confronting Marine Aquaculture

1. **Nature of the Aquaculture Industry**
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Complexity of the Marine Aquaculture Industry

- Location of the aquaculture operation
- Environmental quality controls
- Aquaculture species
- Use of feeds and chemicals
- Processing and sale of culture products

Factors Unique to Marine Aquaculture

- Relatively new use of coastal/ocean resources
- Marine-based - requires land and freshwater access as well
- Numerous legal and institutional considerations

Issues Confronting Marine Aquaculture

1. Nature of the Aquaculture Industry
2. **Socio-cultural Considerations**
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Socio-cultural (community) issues

- Disruption of small rural communities
- Collocation with incompatible uses
- Cultural differences and traditions
- Inaccurate, withheld, or disrupted info
- Ignorance or unconcern
- Structural, social, economic inequalities
- Personalities and power struggles

Issues Confronting Marine Aquaculture

1. Nature of the Aquaculture Industry
2. Socio-cultural Considerations
3. **Coastal Use Conflicts**
4. Environmental and Ecological Concerns
5. Institutional and Legal Environment

Major Marine Aquaculture Use Conflicts

- Recreation (fishing and boating)
- Commercial fishing
- Navigation
- Energy development
- Limited space
- Development
- Environmental resource concerns
- Aesthetics

Issues Confronting Marine Aquaculture

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Environmental Impacts of Aquaculture

- Water quality
- Benthic layer
- Native gene pool
- Ecosystem function
- Non-native species
- Disease
- Chemicals
- Others

Issues Confronting Marine Aquaculture

1. Nature of the Aquaculture Industry
2. Socio-cultural Considerations
3. Coastal Use Conflicts
4. Environmental and Ecological Concerns
5. **Institutional and Legal Environment**

Regulatory Environment for Aquaculture in the United States*

- Federal Level
 - 10 agencies with direct permitting authority
 - 11 agencies with indirect regulatory involvement
 - >50 federal laws directly affect aquaculture
 - >70 federal laws indirectly affect aquaculture
- State Level
 - 32 state programs evaluated
 - 1,200 state laws affect aquaculture

*Aspen Corp. 1981

Regulatory Environment for Aquaculture in the United States

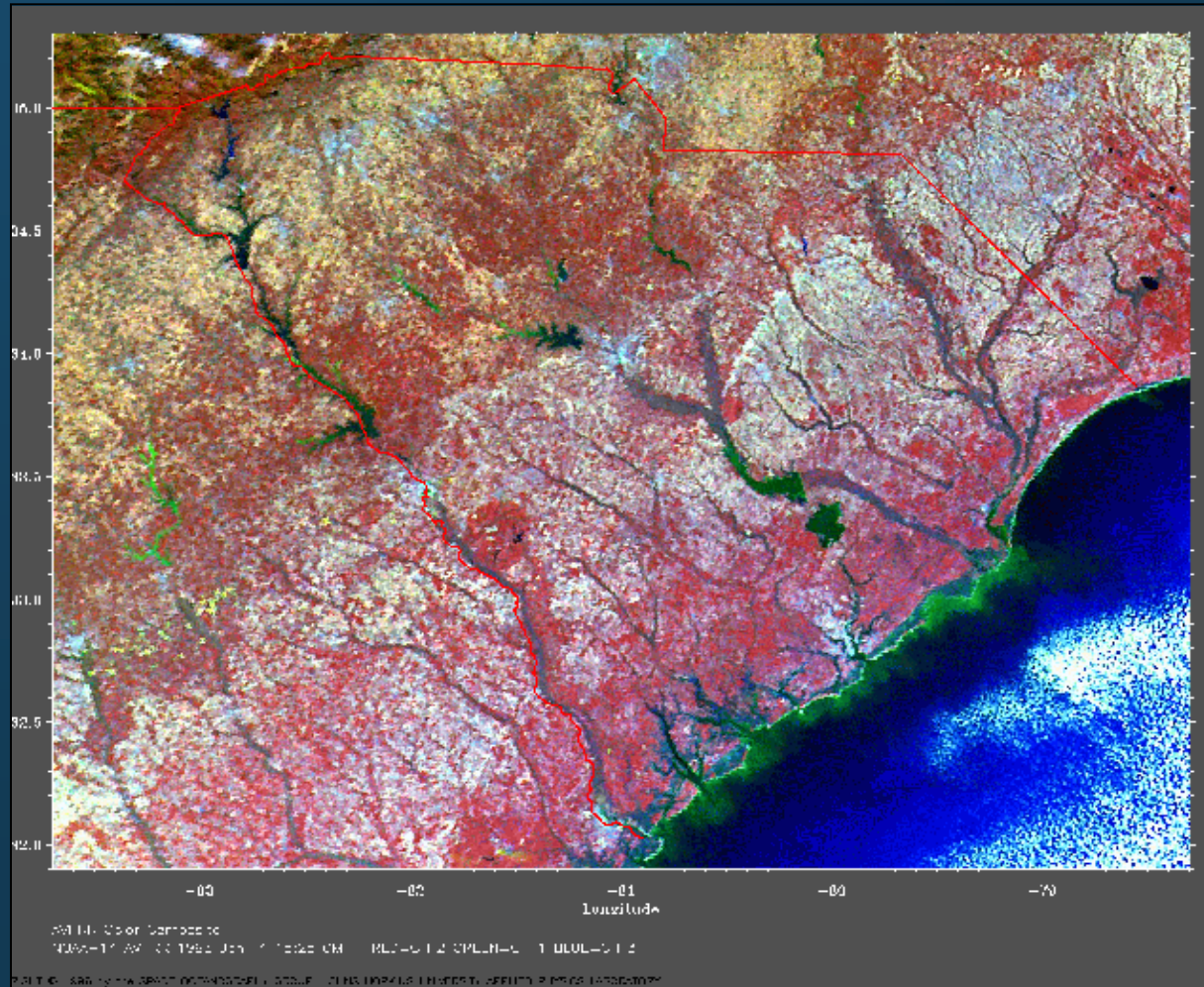
- Federal Level
 - Lack of coordination among federal agencies
 - No federal regulatory framework of standards
 - Uneven application of existing laws and regulations
 - Use of regulations not intended for aquaculture
 - No long-range or "whole-system" planning

Regulatory Environment for Aquaculture in the United States

- State Level
 - Lack of uniformity among states
 - Case-by-case decision-making
 - Number of permits, licenses and certifications
 - Application processing time

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The South Carolina Landscape



Past Aquaculture Policy Actions in S.C.

- Interim Aquaculture Permitting Guide (1984; 1987)
- Designation of Aquaculture as Agriculture (1986)
- Aquaculture Permit Assistance Office established (1988)
- Strategic Plan for Aquaculture Development (1989)
- State Government Reorganization (1993)
- Changes in Regulations (continuous)

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AN INTERIM GUIDE TO AQUACULTURE PERMITTING IN SOUTH CAROLINA

by

M. Richard DeVoe

S.C. Sea Grant Consortium

and

Jack M. Whetstone

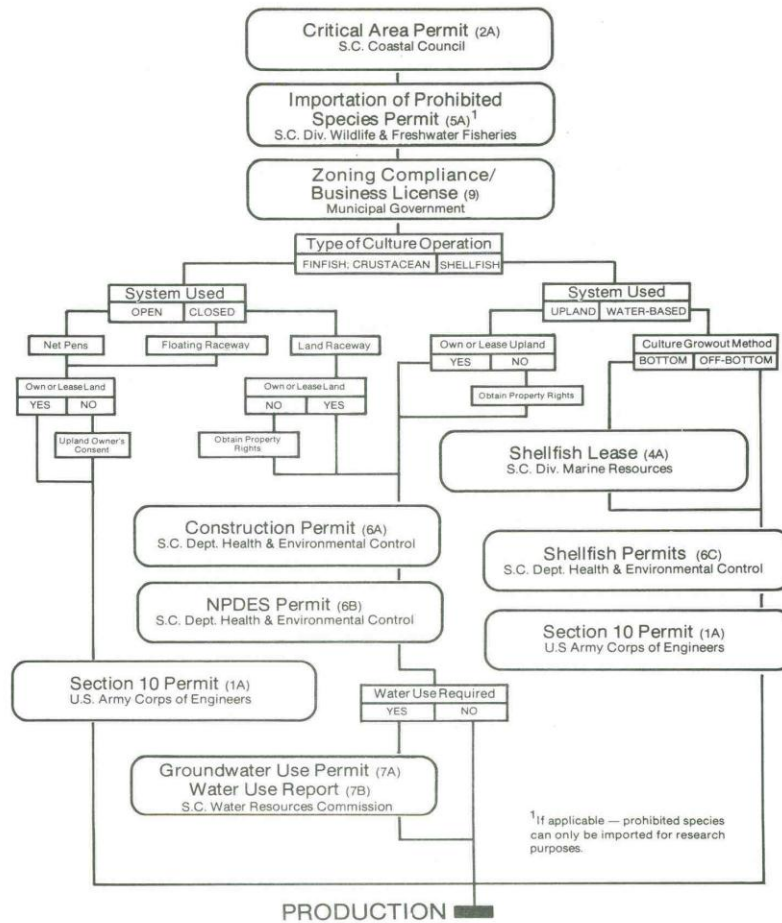
S.C. Sea Grant Extension Program/Clemson University/SCDNR

Coastal Zone/Critical Area in S.C.



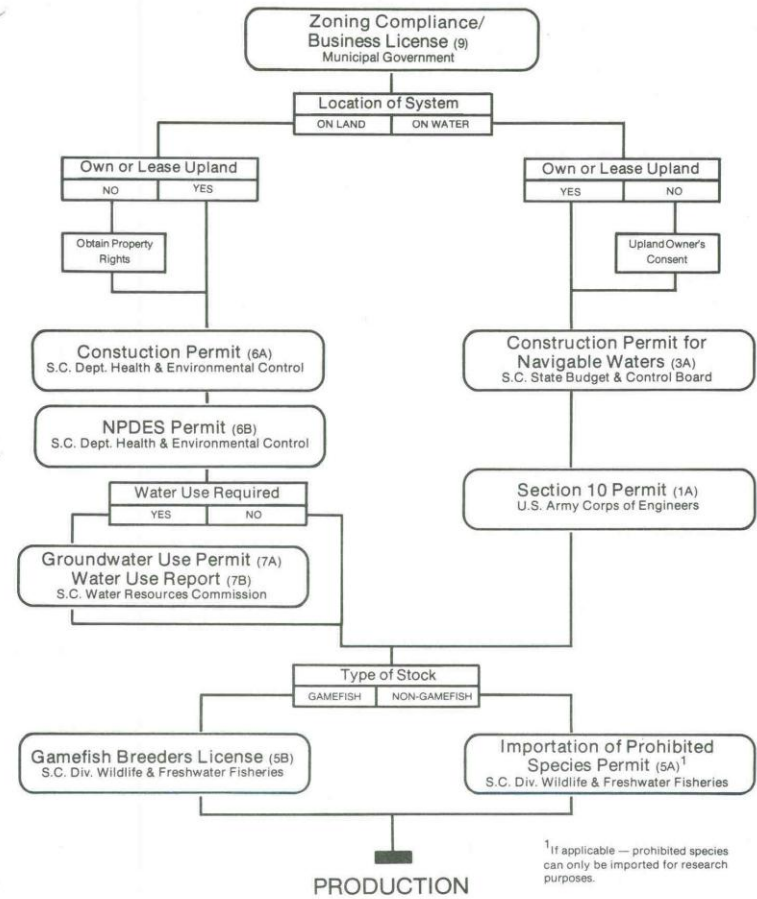
The Coastal Zone (tan) is comprised of coastal waters and submerged bottoms seaward to the state's jurisdictional line as well as the lands and waters of the eight coastal counties. The Critical Area (red) is defined as all tidelands, coastal waters, beaches and oceanfront sand dune systems.

Permit Structure: The "Critical Area"



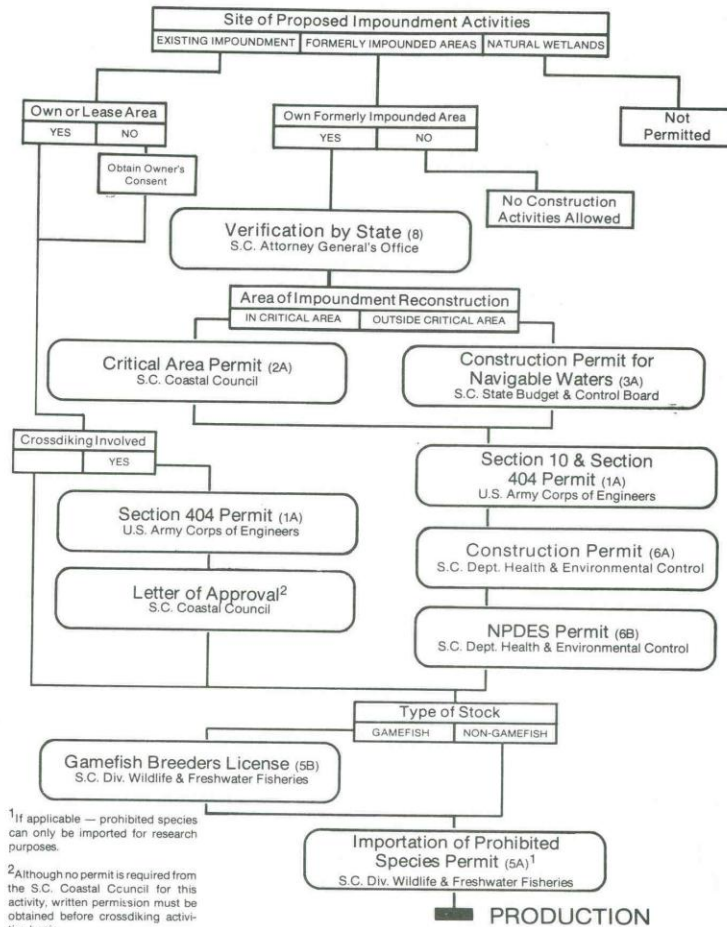
7

Permit Structure: Outside the "Critical Area"



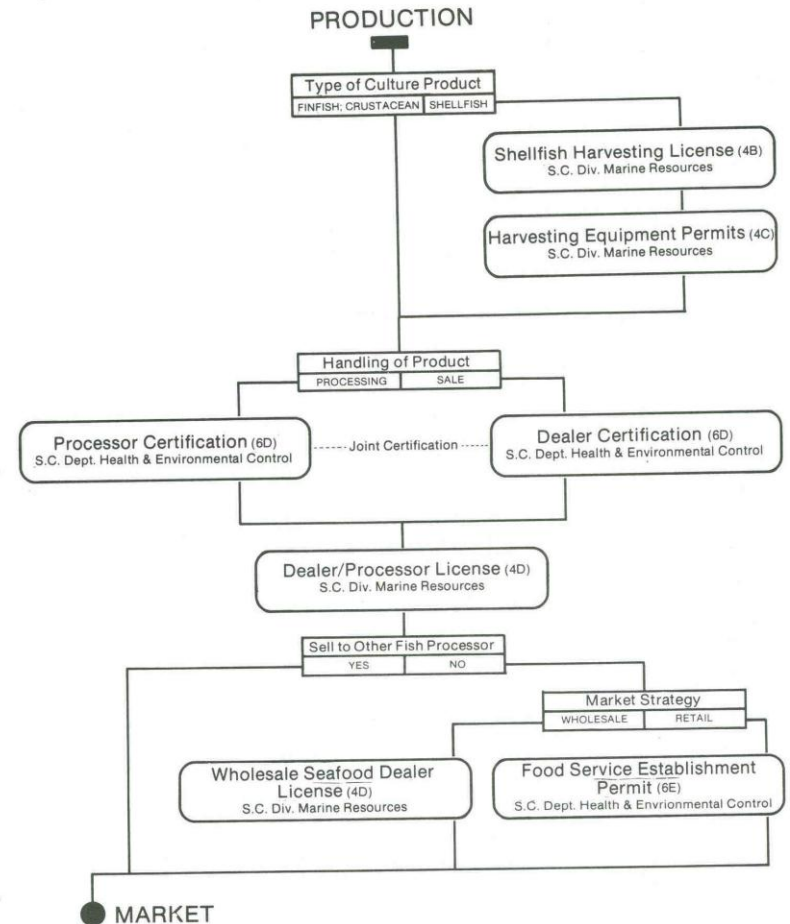
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Permit Structure: Impoundments



11

State Permit Structure: Harvesting, Processing, Sale



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Federal Permitting

Agency: U.S. Army Corps of Engineers

Permits:

1. Section 10 – Rivers and Harbors Act of 1899
2. Section 404 – Clean Water Act of 1972, as amended

Agency Input:

- U.S. Environmental Protection Agency
- U.S. Fish & Wildlife Service
- NOAA National Marine Fisheries Service
- NOAA Ocean & Coastal Resources Management

State Permitting

Agency: S.C. Department of Health & Environmental Control (OCRM)

Permits: 1. Critical Area Permit
2. Coastal Zone Consistency Certification

Agency: S.C. Water Resources Commission (WRC)

Permits: 1. Navigable Waters Permit
2. Storm Water Management/Sediment Reduction Permit

State Permitting

Agency: **S.C. Department of Health & Environmental Control**

Permits:

1. **National Pollutant Discharge Elimination System (NPDES)**
2. **Section 401 Water Quality Certification**

State Permitting

Agency: **S.C. Department of Natural Resources**

- Permits:
1. Shellfish Culture/Mariculture Permit
 2. Mariculture Finfish Permits
 3. Hybrid Striped Bass Permit
 4. Mariculture Shellfish Permits
 5. Shellfish Harvesting Permit
 6. Harvesting Equipment Permits
 7. Importation of Exotics Permit
 8. Dealer/Processor Licenses

State Permitting

Agency: S.C. Department of Health & Environmental Control (DWP)

Permit: 1. Groundwater Use Permit

Agency: S.C. Department of Health & Environmental Control (WPC)

Permits:

1. Shellfish Depuration/Distribution Certificates
2. Processing Certificates
3. Shellfish Relaying Permit
4. Construction of Depuration Facilities Permit

Local Permitting

Entities: **Towns, Cities, Municipalities**

Permits:

1. **Conditional Use/Zoning Permit**
2. **Variance/Rezoning Permit**
3. **Building/Development Permit**

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Aquaculture Permit Assistance Office



Aquaculture Planning and Development

(Thia-Eng and Tech, 1990)

- Culture Species
 - Etiology
 - Population Ecology
 - Genetics
 - Nutrition Biology
 - Pathology
 - Reproductive Biology
 - Habitat
- Economics
 - Output Market
 - Factor Market
 - Transfers
 - Endowment
 - Infrastructure
 - Production Function
- Resources
 - Site Availability
 - Manpower
 - Financial
- Social
 - Use Rights
 - Access
 - Ownership
 - Conflicts
 - Demography
 - Social Structure
 - Social Institution
 - Social Relations
 - Government
 - Credits
- Culture Systems
 - Scale of Optimal Size
 - Productivity
 - Recruitment
 - Seed Stocking
 - Feeding
 - Catchability
 - Disease Control
 - Product Quality
 - Engineering
 - Farming System
 - Carrying Capacity
- Ecosystem
 - Pollution
 - Environmental Impacts

Elements of 'Ideal' Marine Aquaculture Policy Framework*

- Designated zones for aquaculture
- Exclusive property rights
- Regulatory coordination and streamlining
- Risk safety net
- Mechanism to address:
 - Seed and feed stocks
 - Species selection
 - Disease

*Riser, 1997

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Offshore Leasing for Wind Energy Development in South Carolina: Leasing Work Group Efforts



Regulatory Task Force for Clean Coastal Energy

Recommended to the Wind Energy Production Farms Feasibility Study Committee that South Carolina...

"...develop and implement a leasing framework for state offshore waters that could be applied to all potential uses of state waters offshore, including wind energy development.

"...not delay current offshore wind projects for the implementation of leasing. Current work and projects should continue unimpeded under current regulations with provisions to accommodate these under any future leasing plan."

Issues that Leasing Addresses – The Public's Perspective

- Protect public trust rights (common property resources)
- Provide adequate public access to ocean areas while also exclusivity for the proposed operation
- Serve the public interest through performance expectations, and possibly compensation



Issues that Leasing Addresses – The Operator's Perspective



Dreamstime.com

- Adequate property rights to protect the investment and investor
- Security of ownership of facilities and equipment deployed and used (e.g., trespass, theft, vandalism)
- Nature of governmental authorization received by the operator (e.g., ownership, lease, or other form of conveyance)

The background of the slide features a collage of marine life, including several seashells of various sizes and a large, light-colored starfish, all set against a dark blue, textured background.

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